

RIVERS AND FLOODS

[River and Flood Division, MERRILL BERNARD in charge]

By BENNETT SWENSON

Heavy rains caused sudden freshets in the Belle Fourche and White River watersheds in South Dakota on July 13-14 and resulted in losses of about \$61,300 and \$60,000, respectively. Two lives were lost in connection with the flood in the White River. Otherwise, no damage of consequence was reported from the floods, which were mainly of a minor character, during the month.

Light, but very sudden, floods occurred in the middle reaches of the Grand River in Missouri on July 14-15 and again on the 20th. Heavy rains on July 12-14 averaged 3.31 inches over the Grand River watershed and caused the stage at Chillicothe, Mo., to rise from 1.9 feet on July 11 to a crest of 20.1 feet on the 14th. Moderately heavy rains on the 18th-19th caused a second rise in the river.

The heavy rains over South Dakota on July 12-13 and on July 18-19 between Sioux City, Iowa, and Kansas City, Mo., caused sharp rises in the middle Missouri River. Flood stage was exceeded, however, only at Nebraska City, Nebr., with a crest 0.5 foot above flood stage on July 20.

An interesting feature during the month was the phenomenally heavy precipitation that occurred over the St. Francis River Basin in Missouri and Arkansas. During the 24-hour period ending on the morning of July 4, 10.33 inches of rain fell at Fisk, Mo., and 7.45 inches at St. Francis, Ark. Due to the condition of the ground and the low stages in the streams at this time of the year, the excessive rain resulted in only light flooding in the St. Francis River at Manila and St. Francis, Ark.

Table of flood stages during July 1937

[All dates in July unless otherwise specified]

River and station	Flood stage	Above flood stages—dates		Crest	
		From—	To—	Stage	Date
ST. LAWRENCE DRAINAGE					
Lake Erie					
St. Joseph: Montpelier, Ohio.....	Feet 10	26	27	Feet 10.4	27
ATLANTIC SLOPE DRAINAGE					
James: Columbia, Va.....	10	20	22	14.9	21
Tar: Rocky Mount, N. C.....	8	27	28	9.0	28
Little: Kenly, N. C.....	8	28	29	9.5	29
Santee: Rimini, S. C.....	12	1 28	4 (1)	12.7 12.5	3 30
MISSISSIPPI SYSTEM					
Missouri Basin					
Grand: Chillicothe, Mo.....	18	14 20	15 20	20.1 19.0	14 20
Missouri: Nebraska City, Nebr.....	15	19	20	15.5	20
Ohio Basin					
West Fork of White: Anderson, Ind.....	8	13 27	18 27	9.1 8.1	14, 16 27
Lower Mississippi Basin					
Big Lake Outlet: Manila, Ark.....	10	7	14	11.1	10-11
St. Francis: St. Francis, Ark.....	18	6	11	18.4	7, 10

¹ Above flood stage at end of month.

WEATHER ON THE ATLANTIC AND PACIFIC OCEANS

[The Marine Division, WILLIS E. HURD, acting in charge]

NORTH ATLANTIC OCEAN, JULY 1937

By H. C. HUNTER

Atmospheric pressure.—Over waters adjacent to Europe the pressure again averaged slightly greater than normal. Most of the ocean otherwise had pressure somewhat less than normal, the greatest known deficiency being 0.10 inch, at Reykjavik, Iceland. The Gulf of Mexico is indicated as having a very little above normal pressure.

The extremes of pressure found in the vessel reports at hand are 30.51 and 29.24 inches. The higher reading was noted during the forenoon of the 11th, approximately midway between Horta and Lisbon, on the French steamship *Capitaine Paul Lemerle*. Two liners only a few miles apart, near 47° N., 36° W., the Belgian *Emile Franquini* and the Dutch *Edam*, each recorded the lower reading on the forenoon of the 16th.

TABLE 1.—Averages, departures, and extremes of atmospheric pressure (sea level) at selected stations for the North Atlantic Ocean and its shores, July 1937

Stations	Average pressure	Departure	Highest	Date	Lowest	Date
	<i>Inches</i>	<i>Inch</i>	<i>Inches</i>		<i>Inches</i>	
Julianehaab, Greenland.....	29.75	-0.05	30.02	8	29.32	31
Reykjavik, Iceland.....	29.74	-0.10	30.12	6	29.35	30
Lerwick, Shetland Islands.....	29.88	+0.08	30.21	17	29.50	22
Valencia, Ireland.....	30.01	+0.03	30.27	19	29.65	23
Lisbon, Portugal.....	30.05	+0.03	30.18	9	29.86	30
Madeira.....	30.06	+0.01	30.18	9, 14, 15	29.92	20
Horta, Azores.....	30.20	-0.07	30.46	10	29.76	25
Belle Isle, Newfoundland.....	29.87	-0.02	30.16	24, 29	29.46	3
Halifax, Nova Scotia.....	29.97	+0.02	30.22	30	29.54	16
Nantucket.....	29.97	-0.01	30.18	29	29.60	16
Hatteras.....	30.00	-0.01	30.17	28	29.53	31
Bermuda.....	30.17	-0.01	30.26	27, 28	30.04	13
Turks Island.....	30.05	-0.02	30.18	1	29.95	7
Key West.....	30.04	+0.01	30.14	10	29.93	1
New Orleans.....	30.04	+0.04	30.18	10	29.86	1

NOTE.—All data based on a. m. observations only, with departures compiled from best available normals related to time of observation, except Hatteras, Key West, Nantucket, and New Orleans, which are 24-hour corrected means.